Department of
Building and Housing
Te Tari Kaupapa Whare

Timber Treatment

Summary information from
NZS 3602: 2003
Timber and Wood-based Products
for Use in Building

INTRODUCTION

This booklet is a summary of the New Zealand Standard NZS 3602: 2003 Part 1 Timber and Wood-based Products for Use in Building. It explains some of the information in NZS 3602: 2003 on common uses of treated Radiata pine and Douglas fir in buildings.[1]

NZS 3602: 2003 Part 1 is cited in Acceptable Solution B2/AS1 for meeting the requirements of Building Code Clause B2 Durability. To find out more about the Building Code and Acceptable Solutions visit the Department of Building and Housing website (www.dbh.govt.nz).

This booklet is not a substitute for the complete Standard. Designers and specifiers should acquire the Standard for complete information.

NZS 3602: 2003 is available from Standards New Zealand by calling 0800 735 656.

Please note that the timber treatment levels in this booklet are a minimum – you may use a higher level of treatment if you wish.

SAFETY AND HEALTH

Timber treatments consist of chemicals that may be harmful. Important measures to take when using treated timber are:

- reduce contact by wearing gloves, goggles and a dust mask
- don't burn off-cuts or cook with them
- dispose of waste in an approved landfill
- wash your hands before using the toilet, smoking or eating
- wash work clothes separately
- ventilate work spaces as much as you can
- **working with solvent damp timber is not advised, solvent damp timber should be allowed to properly dry off before use.**

[1] Note: For other commonly used timbers, refer to NZS 3602: 2003.

HAZARD CLASSIFICATIONS

(See NZS 3640: 2003 for more information)

HAZARD CLASS	EXPOSURE	SERVICE CONDITIONS	BIOLOGICAL HAZARD	TYPICAL USES
H1.1	Protected from the weather, above ground	Protected from the weather, always dry	Borer	Interior finishing timber – see NZS 3602
H1.2	Protected from the weather, above ground, but with a possibility of exposure to moisture	Protected from weather, but with a risk of moisture content conducive to decay	Decay fungi and borer	Wall framing – see NZS 3602
H3 (AS/NZS 1604)	Exposed to the weather, above ground	Periodic wetting, not in contact with the ground	Decay fungi and borer	Plywood – see NZS 3602
H3.1	Exposed to the weather, above ground	Periodic wetting, not in contact with the ground	Decay fungi and borer	Cladding, fascia, joinery – see NZS 3602
H3.2	Exposed to the weather, above ground or protected from the weather but with a risk of moisture entrapment	Periodic wetting, not in contact with the ground, more critical end uses	Decay fungi and borer	Decks, pergolas, external beams, posts not in ground
H4	Exposed to the weather, in ground or in fresh water	Ground contact, or conditions of severe or continuous wetting	Decay fungi and borer	Fence posts, landscaping timbers not requiring a building consent
H5	Exposed to the weather, in ground or in fresh water	Ground contact, or conditions of severe or continuous wetting, where uses are critical and where a higher level of protection than H4 is required	Decay fungi and borer	House piles and poles, crib walling, posts in ground for decks, verandas, pergolas

IDENTIFYING TIMBER TREATMENTS

(See NZS 3640: 2003 for more information)

HAZARD CLASS	METHODS OF IDENTIFICATION	
H1.1	End branding	
H1.2	Permethrin plus TBTO, TBTN or IPBC	Blue
	Boron	Pink
H3 (AS/NZS 1604)	Face branding	
H3.1	H3.1 framing shall be face branded along the length at 1500 mm centres only on its face or edge. TBTO / TBTN	No added colour or, if coloured green, the colour is to be distinctly different from the green of the H3.2 preservative treatment (colour green 368).
H3.2	No added colour, the natural colour of treated timber is varying shades of green/brown.	
H4		
H5		

BRANDING

The brand shall identify:

(a) the plant responsible for preservative treatment of the timber by means of a plant number or trade name

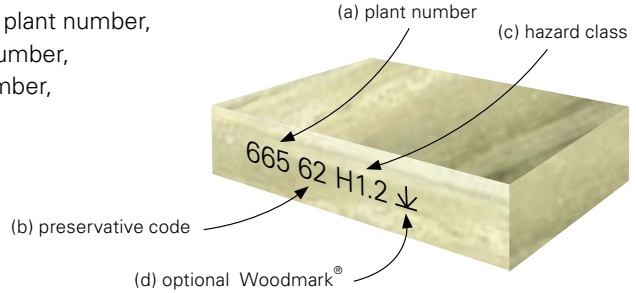
(b) the preservative type using the following code numbers:

CCA oxide	01
CCA salt	02
Boron	11
TBTO	56
Copper naphthenate	57
Copper azole	58
TBTN	62
IPBC	63
Propiconazole + tebuconazole	64
Permethrin	70
Alkaline copper quaternary	90

(c) the hazard class for which the timber has been treated

(d) Woodmark® (optional).

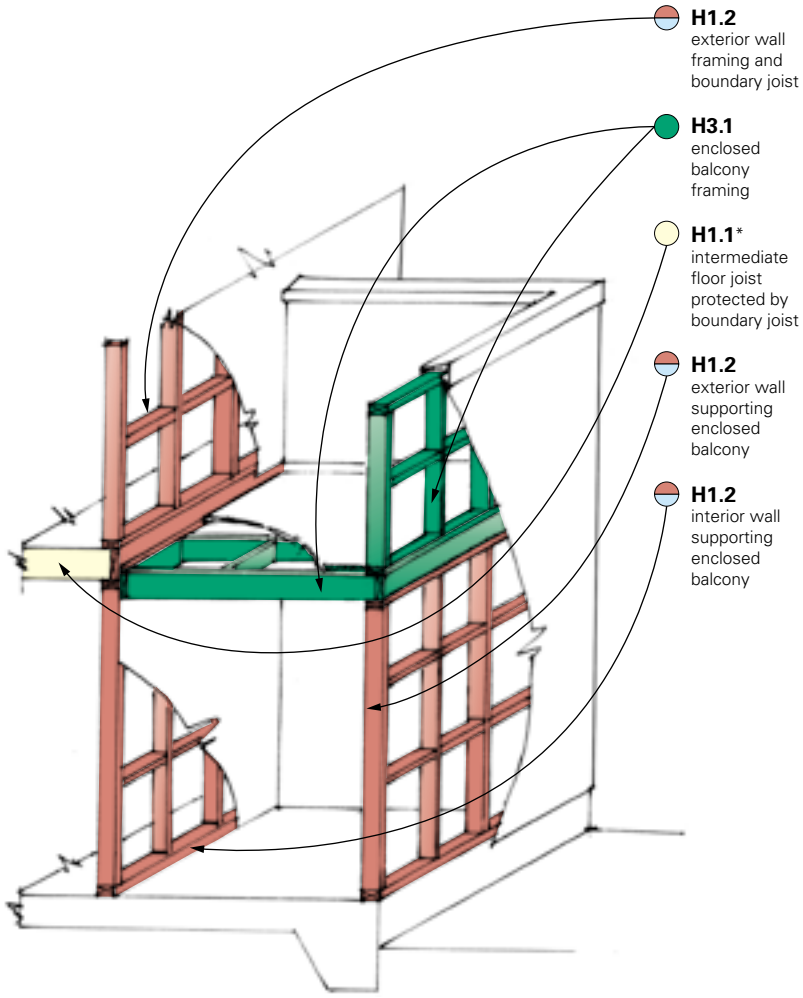
The sequence of the information in the brand shall be (a) plant number, (b) preservative code number, and (c) hazard class number, as in the example.



EXAMPLES OF TIMBER TREATMENT

These drawings are not intended as construction drawings.
They illustrate some of the requirements of NZS 3602: 2003 only.

Figure 1: Enclosed balcony supported by framed walls



* Untreated Douglas fir and untreated kiln dried and planer gauged Radiata pine may also be used

Figure 2: Enclosed balcony supported by posts and beams

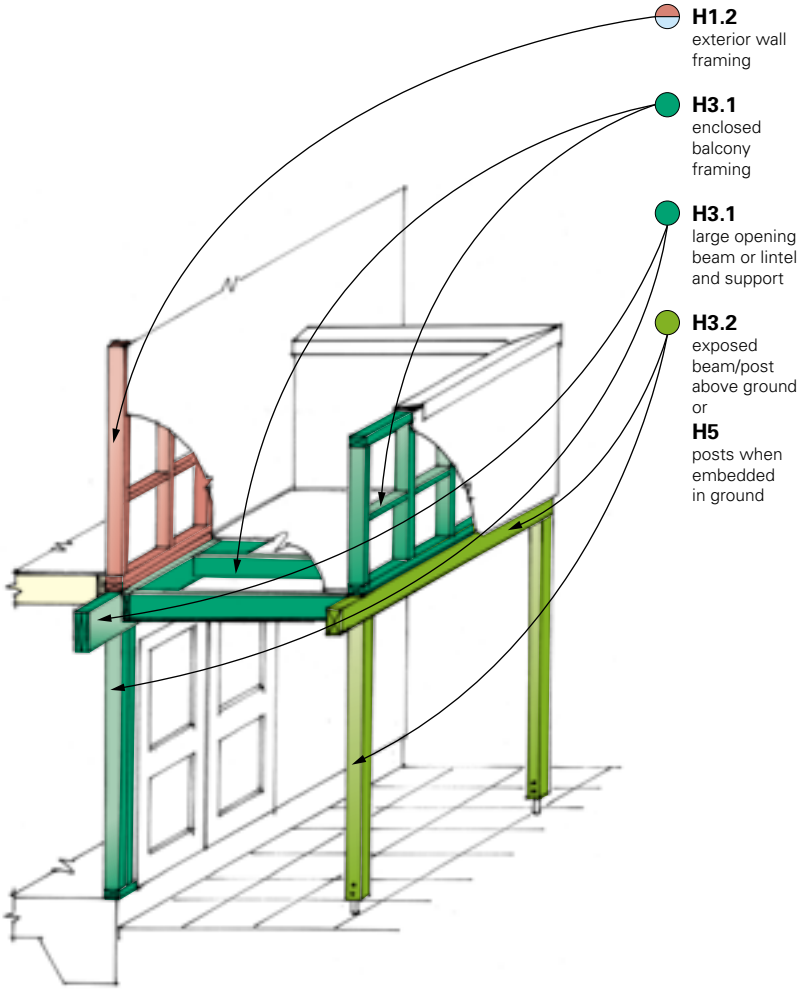


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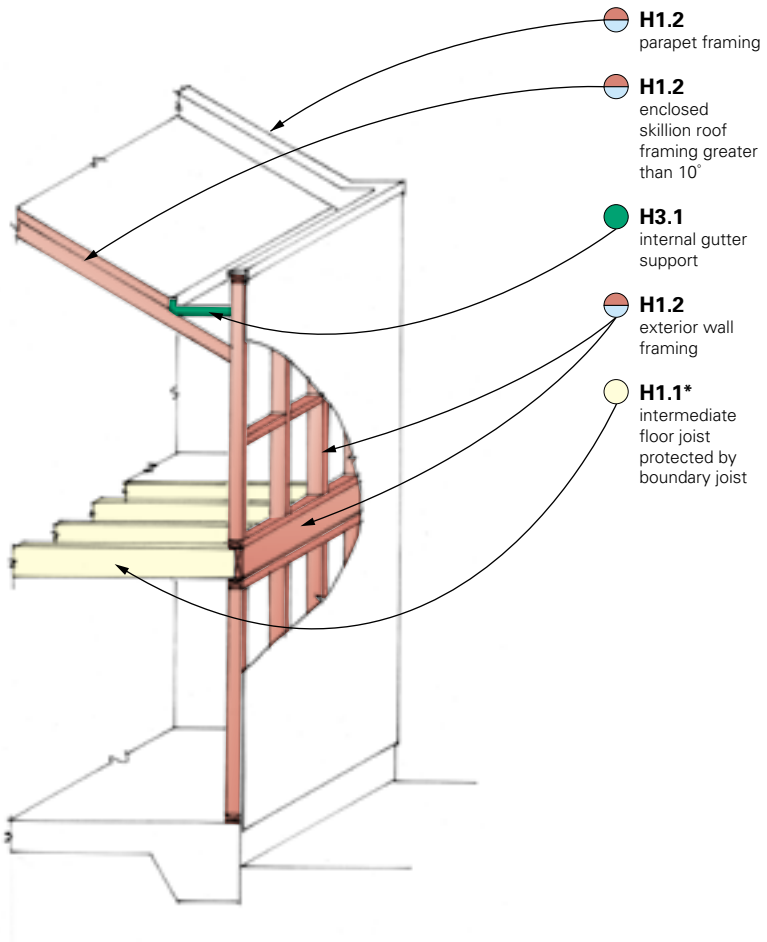
Figure 3: Parapet and exterior wall



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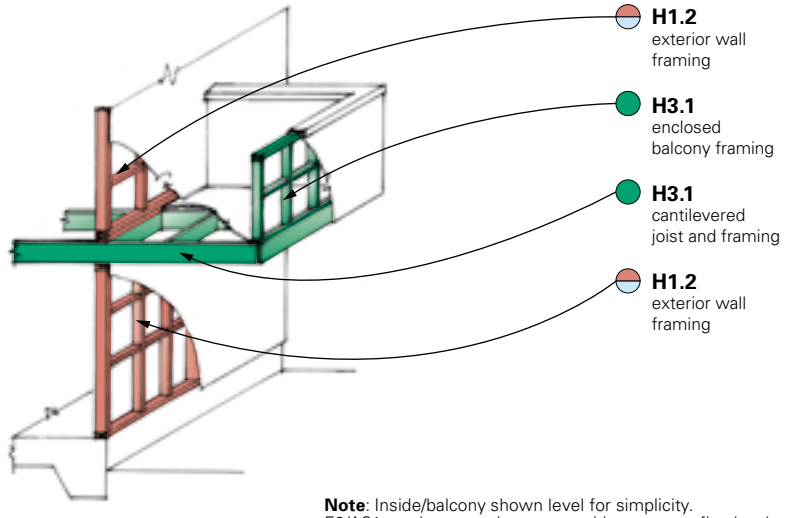
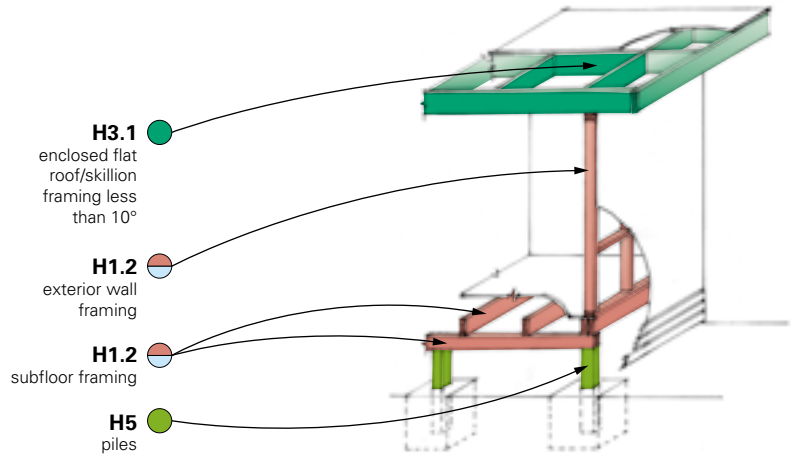
Note: Where there are no boundary joists – joists must be H1.2

Figure 4: Enclosed balcony cantilevered joist



Note: Inside/balcony shown level for simplicity.
E2/AS1 requires step down to outside waterproofing level.

Figure 5: Enclosed flat roof framing (less than 10⁰)



EXAMPLES OF TIMBER TREATMENT

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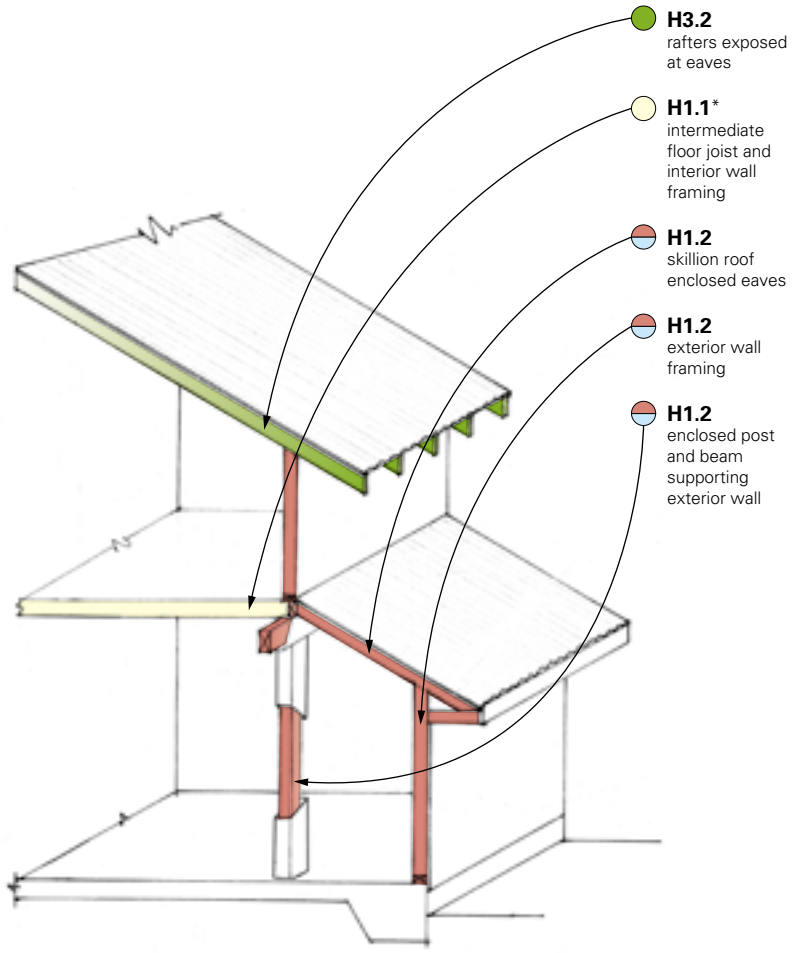
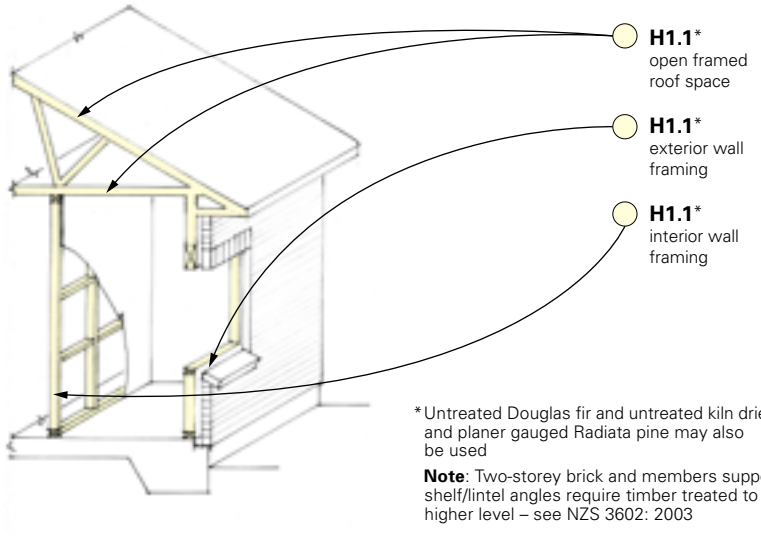
Figure 6: Post and beam



* Untreated Douglas fir and untreated kiln dried and planer gauged Radiata pine may also be used

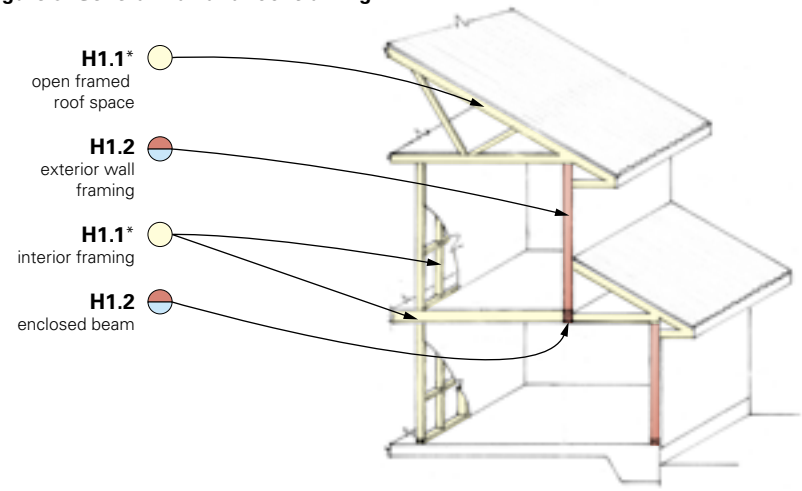
Figure 7: Low risk brick veneer (as defined in NZS 3602: 2003)



*Untreated Douglas fir and untreated kiln dried and planer gauged Radiata pine may also be used

Note: Two-storey brick and members supporting shelf/lintel angles require timber treated to a higher level – see NZS 3602: 2003

Figure 8: General wall and roof training



* Untreated Douglas fir and untreated kiln dried and planer gauged Radiata pine may also be used

BUILDING COMPONENTS AND TREATMENT

BUILDING COMPONENT		SPECIES OR TYPE	MINIMUM TREATMENT REQUIRED
External in contact with ground	Building piles Plywood and timber frame foundations Crib walling Sawn poles House poles Retaining walls – uprights	Radiata pine	H5
	Retaining walls – horizontal members		H4
External not in contact with ground	Posts, bearers, beams, floor joists, rafters, guardrails, stair stringers	Radiata pine	H3.2
	Laminated beams and posts Plywood cladding as wall bracing		H3
Subfloor	Jackstuds, subfloor braces, bearers, wall plates, floor joists to the subfloor, blocking etc, subfloor wall studs, walings and battens, wall studs and nogs, diagonal boards	Radiata pine and Douglas fir	H1.2
	Plywood sheet bracing	Plywood	H1.2
Floors	Interior flooring **Note**: Flooring in wet areas may require timber or plywood treated to H3.1 – refer to NZS 3602: 2003 for full requirements.	Plywood and particleboard	None
		Dressed timber	See NZS 3602

BUILDING COMPONENT		SPECIES OR TYPE	MINIMUM TREATMENT REQUIRED
Walls	Timber: • within enclosed decks or balconies • supporting enclosed decks or balconies, where failure could be life threatening eg, enclosed post and beam construction • to which shelf angles and lintel angles for masonry veneers are fixed and their supporting members • cavity battens behind cladding • in exterior walls where monolithic claddings that **do not comply** with E2/AS1 are fixed directly to framing • used as weatherboards • for exterior joinery such as window and door frames.	Radiata pine	H3.1
	Timber: • within or beneath a parapet • supporting enclosed decks or balconies • in exterior walls except where otherwise specified eg, where monolithic claddings that **do comply** with E2/AS1 are fixed directly to framing.	Radiata pine and Douglas fir	H1.2
	Plywood exterior wall bracing	Plywood	H3
	Timber: • in exterior walls clad with masonry veneer and complying with special conditions (refer to NZS 3602) • in internal wall framing excluding those supporting decks and balconies • midfloor framing excluding boundary joists.	Radiata pine – KD gauged	None
		Radiata pine – other	H1.1
		Douglas fir	None
	Internal wall bracing	Plywood	None
Stairs etc.	External stair timbers, unroofed decking	Radiata pine	H3.2
	Internal stair timbers Interior finishing timbers and shelves	Radiata pine and Douglas fir	None

BUILDING COMPONENT		SPECIES OR TYPE	MINIMUM TREATMENT REQUIRED
Roofs	Sarking and framing not protected from solar driven moisture through absorbent cladding materials	Radiata pine	H3.1
	Enclosed flat roof framing and associated roof supporting members Valley boards and boards supporting flashings or box gutters, and flashings to roof penetrations and upstands to roof decks		
	Enclosed skillion roof framing and associated roof members **Note**: any roof under 10° is classified as a flat roof, see above	Radiata pine and Douglas fir	H1.2
	All timber in roofs not otherwise specified above	Radiata pine – KD gauged	None
		Radiata pine – other	H1.1
		Douglas fir	None

Note: This booklet provides a summary of Radiata pine or Douglas fir treatment requirements contained in NZS 3602: 2003. It will not provide enough information for a designer to produce detailed timber specifications.

MORE INFORMATION

Copies of this document can be downloaded free from the Department's website (www.dbh.govt.nz) or call 0800 242 243 for a hard copy.

The New Zealand Standard NZS 3602: 2003 Timber and Wood-based Products for Use in Building can be purchased from Standards New Zealand – call 0800 735 656 or visit www.standards.co.nz

The Acceptable Solution B2/AS1 can be downloaded free from the Department's website (www.dbh.govt.nz). Hard copies can be bought from Victoria University Bookcentre (0800 370 370).

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